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of Minorities
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Item 12 of the provisional agenda

REVIEW OF FURTHER DEVELOPMENTS IN FIELDS WITH WHICH THE SUB-COMMISSION HAS BEEN OR MAY BE CONCERNED

Note verbale dated 15 June 1999 from the Permanent Mission of Iraq to the United Nations Office at Geneva addressed to the Office of the High Commissioner for Human Rights

The Permanent Mission of the Republic of Iraq to the United Nations Office at Geneva presents its compliments to the Office of the High Commissioner for Human Rights and has the honour to transmit herewith* a study entitled "The use of depleted uranium and its impact on man and environment in Iraq" (English version).

The Permanent Mission of the Republic of Iraq would be grateful if you could circulate the attached study as an official document of the fifty-first session of the Sub-Commission under agenda item 12.

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* The attachment is circulated as received, in the language of submission only.

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THE USE OF DEPLETED URANIUM AND ITS IMPACT ON MAN AND ENVIRONMENT IN IRAQ

A STUDY SUBMITTED BY THE REPUBLIC OF IRAQ TO THE (51) SESSION OF THE SUB-COMMISSION ON PREVENTION OF DISCRIMINATION AND PROTECTION OF MINORITIES

1 Since its establishment the United States has conducted two genocidal atomic wars. The first against Japan in 1945, the second against Iraq in 1991.

2 The first nuclear war fissioned a plutonium bomb and one made of uranium. The second war utilized depleted-uranium weapons, but nuclear fission was not involved.

3 What is Depleted Uranium.

Depleted Uranium is a by-product from the production of enriched fuel for nuclear reactors and weapons, to manufacture shells, bullets and protective armor of tanks. This excess uranium, composed mainly of the uranium isotope U-238 is called "depleted" because is has a lower than normal content of the isotope U-235, the fissionable material. But it has one very "excellent" property – it is extremely dense and capable of penetrating heavily armored vehicles. This capability was ably demonstrated in the Gulf massacre of 1991. "Massacre" describes what happened better than "war".[4]

4 But another physical property, which is not so desirable, is that depleted uranium spontaneously burns on unpact, creating tiny aerosolized particles less than five microns in diameter, small enough to be inhaled. At least seventy percent of the uranium in these weapons is released in this form on impact, and these tiny particles travel long distances when airborne.

5 Another undesirable physical property is the U-238 decays to thorium 234, which has a half life of 24 days. This then decays to protactinium, or a stable concentration some twenty-five weeks after the relatively pure U-238 has been manufactured and thereafter becomes an integral component to the uranium.

6 Uranium 238 emits both alpha and gamma radiation, while the two "daughter" elements mentioned in the above paragraph are both beta and gamma emitters. Gamma radiation is non-particulate radioactive energy, which can induce genetic mutations the instant it traverses a cell. Alpha and beta radiation are particulate forms which, when they pass through a living cell, are likely also to induce either cellular death or a genetic mutation. Alpha is very carcinogenic while beta, because it is a smaller particle, is less so. Mutations in a regulatory gene of a normal body cell can induce cancer years later. Mutation in the germ cells-ova and sperm-can cause genetic abnormalities in future generations.

7 Now let's us talk about the Gulf Massacre, which lasted six weeks. During that time, munitions and armor made with depleted uranium were used for the first time in a military action. Iraq and northern Kuwait were a virtual teasing range for depleted-uranium weapons. Over 940,000 30-millimeter uranium tipped bullets and "more than

14,000 large caliber DU rounds were consumed during Operation Desert Storm/Desert Shied," (*U.S Army Environmental Policy institute*)

8. These weapons were used throughout Iraq with no concern for the health and environmental consequences of their use. Between 300 and 800 tons of Du particles and dust have been scattered over the ground and the water in Iraq, Kuwait, and Saudi Arabia. As a result, hundreds of thousands of people, both civilians and soldiers, have suffered the effects of exposure to these radioactive weapons.

9. The actual tonnage of DU munitions fired during the Gulf War is difficult to ascertain. During the war all battlefield news censored and the expenditure of DU by A-10 attack aircraft was classified.[2] It has been estimated that these aircraft fired about 95% of the DU munitions used during Desert Shield and Desert Storm. The U.S. Army now claims that "More than 14,000 large caliber DU rounds were consumed during Operations Desert Shield/Desert Storm. As many as 7,000 of these round may have been fired in practice. Approximately 4,000 rounds were reportedly fired in combat. The remaining 3,000 rounds are losses that include a substantial loss in a fire at U.S. Army base in Doha, Kuwait[3]

10. The 14,000 rounds contained about 60 metric tons of DU. William Akron estimates from documents released under the Freedom of Information Act that approximately 300 metric tons of DU littered the battlefields of Kuwait and Iraq after the war. The LAKA Foundation estimates the total as 800 tons[4] Allowing for DU projectiles missing their targets, even if only one or two percent of the lower estimate of 300 metric tons burned up, then 3,000,000-6,000,000 grams of DU aerosol particles could have become airborne over battlefields- a huge amount.

11. In a letter (DS/S/SS0692.94m dated 6 December 1994) addressed to the British Member of parliament Sir David Steel Malcolm Rifkind, the British Minister of Defense, admitted that depleted uranium had been used by the British forces in order to improve their ability to confront Iraqi armored vehicles. In that letter, the minister of defense also stated that, in their armored units and A-10 aircraft, the United States forces had used much larger quantities of depleted uranium than the British forces.

12. In his letter, the British Minister of Defense acknowledged that DU shells could disperse small quantities of toxic radioactive substances when they impacted on a hard surface and those substances posed a health hazard if they inhaled for ingested. However, he thought that it was improbable that persons other than those targeted by such shells

would be exposed to sufficient quantities of those substances to endanger their health

13. On November 20, 1998, the U.S. Department of Defense Office of the Special Assistant to Gulf War illness released a map, which the primary areas of DU expenditure during Operation Desert Storm. This map confirms the most of the troops deployed in the Gulf passed through areas contaminated with DU.

14. In this connection, in its edition published in April 1995, the newspaper le Monde Diplomatique quoted a confidential report submitted by the United Kingdom Atomic Energy Authority to the British government in November 1991, which stated that there will be specific areas in which many rounds would have been fired where localized contamination of vehicles and the soil may exceed permissible limits and these could be hazardous to the local population.

15. Not more than ten percent of these projectiles have been detected. The greatest part of them have been blown over and covered with sand or are lying deep in the ground. As rains fall even in these desert regions, the toxic substances permeate the ground water and thus inter the food chain. This is a source of danger in the long run in areas of Iraq, Saudi Arabia and Kuwait. A British company has rejected the order to remove this uranium ammunition because the health risk to its staff is too great.

16. Bedouins from Kuwait battlefields, which U.S. soldiers used as training grounds, reported that hundreds of camels, sheep birds had died in the desert. Examinations made by an American veterinary- a specialist in infectious diseases- showed that the animals had died neither from bullets nor diseases. Some carcasses were covered with insects, but the insects were dead.

17. Saudi Arabia had demanded that all tanks vehicles and instruments of war that had been destroyed by uranium ammunition on their territory be collected by the U.S. Army. This material was carried away and transported to the USA. Before that step it had been buried in the desert.

18. On July 11,1991, a Field Artillery Ammunition Support vehicle (FAASV) loaded with ammunition caught fire in the motor pool and ammunition storage area of the U.S. Army base in Doha, Kuwait. The fire quickly spread to surrounding vehicles and artillery, which were combat loaded with live ammunition. Severe explosions ensued for six hours and residual fires burned well into the following day. A steady wind of approximately eight knots blowing from the northwest likely carried airborne DU particles many miles from the site of the fire".(5)

19. Most of the troops at Doha were unaware of the risks posed by burning

DU rounds, even though an Explosive Ordnance Disposal (EOD) team en route to Doha while the fire was raging warned its commanders of the danger. A central Command log for July 11, 1991, notes:

> EOD POC (point of contact) states that burning depleted uranium puts off alpha radiation Uranium particles when breathed can be hazardous. 11ACR has been notified to treat the area as though it were a chemical hazard area, i.e. stay upwind and were protective mask in the vicinity.[6]

20. A Radiological Contamination (RADCON) team sent to Doha after the fire confirmed that the caused oxidization and dispersal of DU:

> The radiological contamination seemed to the confined to specific locations of the concrete pad surfaces and specific vehicles. ...Elevated levels of localized DU contamination above normal background levels, were detected.[7]

Health Effects

21. The long term effects of internalized depleted uranium are not fully known, but the Army has admitted that "if DU enters the body, it has the potential to generate significant medical consequences. Inhaled DU particles of respirable size may become permanently trapped in the lungs. Inhaled DU particles larger than respirable size may be expelled from the lungs and ingested.

22. DU may also be ingested via hand-to-mouth transfer or contamination of water or food supplies. DU which is ingested, or enters the body through wound contamination, will enter the bloodstream and migrate throughout the body, with most of it eventually concentrating in the kidney, bone, or liver. The kidney is the organ most sensitive to DU toxicity.

23. Much of the ingested DU will be excreted by the body shortly after the exposure, but the DU that remains acts as a chemical and radiological toxin in organs and bones for the remainder of a person's lifetime. Because many of the soldiers exposed to DU during the war were in their twenties, they have many years in which to develop the cancers, kidney problems, and other health problems. Veterans who have shown elevated of DU in their urine several years after the war may have received significant internal DU exposures on the battlefield. For those who have not yet been tested, urinalysis may no longer be effective for determining levels of internalized DU.[8]

24. Reports from Iraq indicate that large numbers of children who lived in or near contaminated areas have developed leukemia's and other health problems which may be associated with exposure to DU. In addition

may children of American veterans exposed to DU have been born with birth defects and health problems. The relationship between exposure to DU and the health problems affecting Iraqi and American children needs to be further investigated.

25 The American Army admits that it has not fully assessed the risks to troops who are exposed to DU on the battlefield. However, they now have long term health effects of internalized DU.

26 The U.S Army and the Veterans Administration have shown an unwillingness to investigate health issues associated with the toxicity and radioactivity of inhaled and ingested DU aerosol particles that have become absorbed in the body. Both have refused to test large numbers of veterans for the presence of DU in their bodies, so far only a handful have been tested. According to Laura Flankers, as of January, 1995, at least 45.000 soldiers deployed to the Gulf during the war are suffering from symptoms connected with their service.

27. The Pentagon, which has been trying so hard to suppress information about the extent, occurrence and possible source of Gulf War Syndrome among its own personnel, would doubtless want to keep any Iraqi source silent on the matter as well. Even a scientist researching the hazardous effects of the war finds herself or himself effectively blocked from reporting important relevant findings.

28 Today the entire population of Iraq is besieged by diseases. We know that waterborne parasites and bacteria and malnutrition in Iraq are responsible for many recognizable diseases, and for wasting and death. But what about reports of a sharp rise in spontaneous abortions, cancers, and other "new diseases"? The Iraq Ministry of Health is systematically documenting some of these health problems.

29 The Iraqi authorities established a specialized committee to investigate the damages and the long run effects of DU on man and environment in Iraq. The committee carried out sampling, analyses research and studies of different environment and medical cases to assess the extent of damages incurred by the use of DU. The result showed the following.

- Five areas in the Basrah province were chosen, Zubair Safwan, Jabal Sanam, North Rumaila and South Rumaila. Heavy use of DU weapons took place in these areas.
- 70 out of 124 measurements recorded more than the background radioactivity (about ten times more, where the natural background in these areas was normally 7 uRh and some readings were up to 184 uRh).
- Samples from surface and ground water and sediments in water canals

head (or its disappearance) twice the number.
Growth retardation for children of 6 years age by about (14 months)

close to the bombarded tanks and military vehicles were collected and tested 58 of these samples showed increase in radioactive nucloids in the sediments in Jabal Sanam and North Rumaila areas.

- 61 out of 124 soil samples recorded several times more than the natural background. Some of the samples gave readings of (995-36205 Bq/Kg) compared to the natural reading of 70 Bq/Kg.

- About 1718 km of the above mentioned areas are contaminated (Radioactive Contamination).

- 154 samples (plants and animals) were tested, 36% of them showed radioactive contamination.

- Medical research and studies:

Medical studies for military personnel who were in the battlefield, both in the south of Iraq and Kuwait, during the same period in 1991, showed a high rise in cancer cases of all kinds. The following table illustrates the data for different types of Cancer (1425 persons).

- The chemical toxicity of DU was also studied. Graduate studies and research carried out at different Iraqi Universities and institutions showed a correlation between DU chemical toxicity and cancer cases.

Cancer cases registered in Iraq, 1991-1997 for military Personnel exposed to DU

Cases	Year								Total
	1991		1992	1993	1994	1995	1996	1997	
	#	%						# %	
Lymphoma	10	345	16	70	85	80	106	82 29.4	449
Leukemia	104	345	28	45	53	61	70	40 14.3	311
Lung CA	4	138	6	39	40	41	40	40 14.3	210
Brain CA	1	34	2	20	30	25	40	34 12.3	162
Gastrointestinal CA	2	69	6	13	15	10	10	10 3.6	66
Testis CA	0	0	1	5	10	12	15	15 5.4	58
Bone CA	2	69	3	5	10	10	12	15 5.4	57
Pancreas CA	0	0	0	0	3	10	12	15 5.4	40
Salivary Gland CA	0	0	0	0	0	10	10	15 5.4	36
Liver CA	0	0	0	0	5	7	10	13 4.6	36
Total	29	100	62	197	251	280	327	279 100	1425

- A relative risk study, which was conducted for different diseases in Iraq, showed an alarming rise in different cases especially during the period (1991-1997) compared to cases recorded in 1989. The following are the relative risks for the cases listed.

Case	Relative risk
Infertility	1.8
Kidney failure	1.95
Keratosis	2.13
Cataract	1.8
Hypo Thyrodism	1.76
Abortion	1.6
Congenital Anomalies	1.8
Cancer	1.7

- There is a special statistical significance increase of some diseases in the southern provinces of Basrah, Misan and Thi-Qar compared to the other provinces of Iraq, e.g.,

Infertility rate is 2.7 in Basrah compared to 1.8 in Iraq.

Congenital anomalies is 3.1 in Basrah compared to 1.8 in Iraq.

Cancer is 5.7 in Misan and 4.3 in Thi-Qar compared to 1.7 in Iraq.

30. Substantial changes in the type of cancer were recorded. High rises in leukemia, Lymphoma, bone cancer were recorded while the average age of cancer patients is lower than before i.e., cases at an early age were recorded contrary to the international standard. Incidence of some types of cancer which were not know or familiar in Iraq previously, such as brain and liver cancers, had been recorded in increasing numbers.

31. Cellular and physiological changes in some patients were recorded in a Large no. which is an indication of being exposed to DU byproducts (causes-effect relationship).

32. There is a high rise in hereditary diseases resulting from chromosomal change, such as eye diseases 2.5, Mongoloid children 6.6, change in number and shape of some organs 1.3, shrinkage in the head (or its disappearance) twice the number.

Growth retardation for children of 6 years age by about (14 months) compared to the normal

33. The above mentioned facts are well documented and presented to the international organizations showing the crime of the century against the Iraqi people and their environment.

Reference:

1. See The Metal of Dishonor How the Pentagon radiates Soldiers and Civilians with DU Weapons by Ramsey Clark and others,1993 ,New York.

2. Osterman, J., "Potential Hazards of Depleted Uranium Penetrators," a Pentagon report to Congressman Les Aspin, Chm. House Armed Service Comm., Photocopy in *Uranium Battlefields Home and Abroad: Depleted Uranium Use by the U.S. Department of Defence*, by Bukowski, G. and Lopez, D.A. , pp86-89.

3. Summary Report to Congress, "Health and Environment Consequences of Depleted Uranium Use by the U.S. Army, " prepared by the U.S. Army Environmental Policy Institute, June 1994, p.10.

4. The LAKA Foundation : Dutch national center for critical documentation on nuclear energy, No. 2 in a series of fact sheets on the Gulf War, June 1994.

5. U.S. Army Safety Center, *op. cit* "Weather Data".

6. United States Central Command log, "11ACR Fire in Doha: Updates from CENTOCOM Forward," July 12, 1991, entry 10.

7. U.S. Army Communications -Electronics Command, letter from safety Office Chief to Freedom of Information Act officer, June 21, 1996, pp.2-3.

8. Ibid.